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NEWS

Demo-Experiments of Bonghan Ducts in Beijing

Dr. Byung-Cheon Lee in the Biomedical Physics Laboratory, Seoul National University visited Prof. Weibo Zhang's laboratory in the Institute of Acupuncture & Moxibustion, Chinese Academy of Chinese Medical Science in Beijing, China, from November 28 to December 3, 2008. The purpose of the visit was to repeat the Bonghan duct experiment in Zhang's lab, which had already been done in Prof. Soh's lab in Korea. The experiment was done on four rabbits and two rats. In the first experiment, the Bonghan duct on the surface of an organ was found by Dr. Lee (Figure 1) after opening the abdomen of a rabbit.

Several experts from different units have seen the novel threadlike structure through a stereoscope and with the naked eye. The sample was taken out to make slides. After toluidine-blue staining, the slides showed many parallel fine fibers (Figure 2) similar to the collagen fibers found by Prof. Mu from Beijing Agriculture College.

Then, a Bonghan duct was found in a lymph vessel by injecting Alcain blue into the lymph system. The Bonghan duct was established as a thin dense blue line by Dr. Lee and was confirmed by Prof. Zhang, who had also seen it through a stereoscope (~40× magnification). The exact position of the blue line was discussed among the Chinese experts. The final experiment was done on rats to find the X-duct in the skin muscle. Chrome-hematoxylin was injected into the muscle layer between two distinguished neural fibers, and two unknown channels could be seen parallel to the neural fibers. A member of Prof. Zhang's lab, Dr. Wang, injected himself with the dye and an unknown channel, which was even longer than one Dr. Lee has made, was seen.

The results showed that the phenomena of the Bonghan duct existed and were repeatable. The micro structure of such ducts should be observed by using a highly modified technique and has not been done in Prof. Zhang's lab yet, but will be done later if possible. The X-channel may not belong to the group of Bonghan ducts, but may have a relation to Prof. Zhang's discovery of a low hydraulic resistance channel. Further study may lead to the discovery of a relation between the X-duct and the low hydraulic resistance channel.

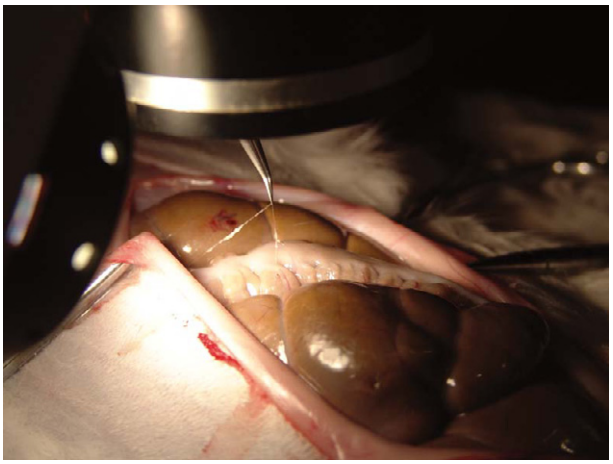

Figure 1 Bonghan duct on the surface of the intestine (taken by Prof. Zhang).

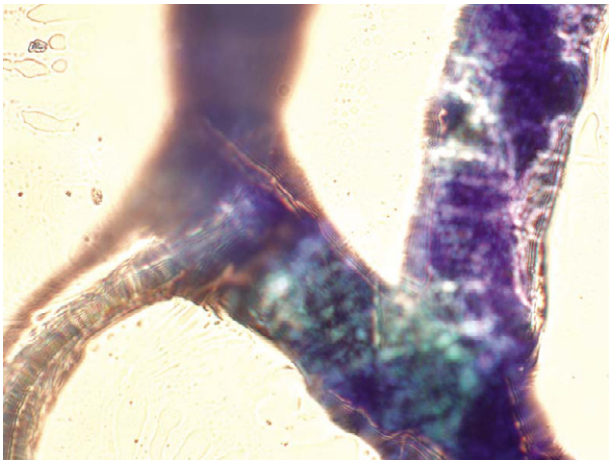

Figure 2 Slide of a Bonghan duct by staining with toluidine blue.